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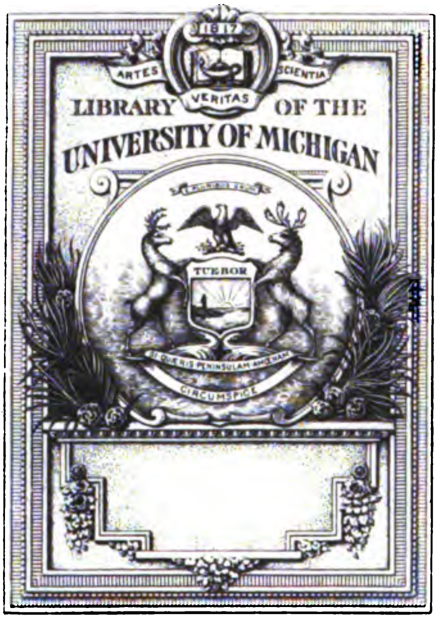
Egypt. Public works dept. - Wadi Raian project



THE GIFT OF
W. J. Hussey

NOTE

ON THE

WADI RAIAN PROJECT

BY

COLONEL SIR C. C. SCOTT MONCRIEFF, K. C. M. G., C. S. I.

CAIRO
NATIONAL PRINTING OFFICE
1889

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9-18-39

THE WADI RAIAN PROJECT

On the 5th April last I submitted to H. E. Nubar Pasha a note summing up the results of Colonel Western's careful survey and study of Mr Whitehouse's Wadi Raian Project. Since then we have received no fresh information on the subject, except that there seems a liklihood of the rock in the great cutting into the Valley being softer than Colonel Western anticipated.

His estimate amounted to L.E. 827,000, and for interest charges during the eight years necessary to fill the reservoir, L.E. 475,095. Total L.E. 1,302,095. The cost of the new canals required to utilize this volume was estimated at L.E. 400,000.

The total of the Project then is L. E. 1,702,095. If the rock cutting turns out very favourable, this may be reduced to perhaps L. E. 1,500,000, or without interest charges, to about L.E. 1,050,000.

9-21-39

Colonel Ross and I estimate that with the water thus rendered available, the area of cotton, sugar cane, and rice cultivation may be increased by perhaps 370,000 feddans. Now without any project, such as this, this area might be irrigated during the Nile flood, and ultimately assessed perhaps as much as P. E. 120 per feddan; while with irrigation supplied at all seasons the assessment might be as high as P.E. 150 per feddan. The additional revenue then obtained from Mr Whitehouse's project would be P.E. 30 per feddan on an area of 370,000, that is L.E. 111,000.

In my note of 9th November 1887 I stated L. E. 115,000, no material difference.

Such are the results of our study, and Mr Whitehouse knows on what figures they are based.

On what he founds his results, his possible additional area of three millions of acres, his increased revenue of L.E. 2,500,000, his estimate of L.E. 2,500,000 for connecting the Wadi Raian with the Nile, I have no knowledge.

In my note of 5th April I said that Colonel Ross and I considered the drainage of the country more important than the storage of Nile water, and that L.E. 500,000 should be devoted to that, before giving to Lower Egypt any additional water supply. Since then has occured a serious failure of Nile flood, and the fact has been brought very prominently to our notice that year after year a considerable area of land in Upper Egypt remains *Sharaki*, that is uncultivated because the waters of the preceding flood did not cover it.

In average years the loss to the Government is L.E. 38,000, while the loss of this season is estimated at L. E. 300,000.

The measures estimated to make Upper and Lower Egypt alike secure from this loss are estimated by Colonel Ross at L.E. 824,994.

He and I both consider that the execution of these measures is more important to Egypt than that of the Wadi Raian project, which, I may remark, if it had been completed a year ago, would not have saved one feddan from being *Sharaki*. Indeed it is a question whether during this last flood the reservoir could have been filled at all, and if it had not been filled, the summer crops of next year would have suffered.

Considering then the financial position of Egypt, I cannot recommend that it should undertake the Wadi Raian at present.

Nor can I recommend that an irrigation Company should be allowed to do so. Our experience in India has been directly against the development of irrigation by commercial Companies. I foresee at least as great evils and difficulties in Egypt as we found in India, and although they may be surmounted, I do not think the case so urgent as to warrant our encountering them.

Cairo, 11th December 1888.

Signed: C. C. SCOTT MONCRIEFF.

NOTE

ON Mr COPE WHITEHOUSE'S LETTER TO THE MARQUIS OF SALISBURY DATED 19th OCTOBER 1887.

Mr Whitehouse urges strongly on the British Government the importance of forming a great reservoir in the Wadi Raian with a view of supplementing the supply of the Nile when at its lowest, and controlling its volume when at its highest. There is no doubt that if the figures in Mr Whitehouse's note at all approach accuracy the project will be one of unspeakable benefit to Egypt. Before criticizing his figures I would say what I have often said elsewhere. Mr Whitehouse has dveoted much time and thought and money to this subject. He has pointed out to the Government of Egypt a very important and hitherto unknown depression, the Wadi Raian having an area of about 230,000 acres; and it is probable (I cannot yet say it is certain) that this depression may be utilized to the great advantage of the country. He deserves therefore the cordial thanks of the Egyptian Government.

Mr Whitehouse alludes in his letter to a change of purpose on my part which he says was "a cruel blow" to him. But I am not aware that I have ever changed my purpose as regards this matter. He says that I stated in 1885 that if a million sterling were granted for irrigation purposes I "could apply L. E. 200,000 or 1/5 of the whole amount to the necessary studies (of storage reservoirs). L. E. 100,000 was distinctly affected to the Mœris scheme".

I do not know where Mr Whitehouse got these figures. In July 1885 I was asked to prepare for the General Assembly of Deputies a note stating in what manner I thought a million might be best utilized for the good of Egypt. I had no estimates to go on, and I wrote:

« The following sketch conveys my general ideas on the subject
« . . . .
« IX. The Fayoum requires earnest attention. If it does not receive
« it, it is certain to go on deteriorating and losing value year by
« year. With judicious outlay upon it I believe its value may be
« greatly increased. . . . . . I trust it will include the solu-
« tion of the problem as to where actually was the Lake Mœris ».

In a former note for Lord Northbrook I had proposed to spend L.E. 120,000 in four years in Fayoum improvements. But I never recollect saying or contemplating the renewal of the Mœris reservoir out of the million sterling.

I proceed to the two objects of Mr Whitehouse's reservoir :

First. — "The protection of Lower Egypt against an excessive rise of the Nile". Now, if we could control a flood such as we have just had it would be of great importance to Egypt. To do so we should at least have a reservoir so large that the operation of filling it would lower the water surface at Cairo by fifty centimetres for thirty days. Every ten centimetres rise when in full flood is equivalent to a volume of eighteen millions of cubic metres per diem. To lower the water fifty centimetres then we must carry off ninety millions of cubic metres per diem, that is about ten per cent of the flood, and in thirty days this would fill a reservoir 2,700 millions of cubic metres in capacity. The Wadi Raian would probably contain this volume, but it is much in excess of what the Bahr Yussuf could carry. It would be necessary then to make a channel direct from the Nile passing under the Ibrahimieh canal. It would require to be 120 metres wide, and would cost probably not less than L. E. 300,000 before it reached the desert ridge. Assuming that this would be crossed in a channel not more than five kilometres long and twelve metres deep (and I believe we are not likely to find any ridge so favourable), the cost would be about L.E. 380,000 or altogether L.E. 680,000.

Now, if it were only a question of storing water for irrigation and not of moderating floods the Wadi Raian might be filled in eighty days instead of twenty-five. This could be done by a canal discharging thirty-one millions cubic metres per diem. Its bed might be forty metres, and assuming data similar to the above it would cost L.E. 220,000.

The price then to be paid for a reservoir constructed to control the floods will not be less than L. E. 680,000 — 220,000 = 460,000.

A much smaller sum than this would suffice to fortify the Nile banks so as to render them safer than would the existence of this reservoir.

But M^r Whitehouse says that this reservoir would enable us to dispense with an annual outlay of L.E. 50,000 "for protection against excessive Nile". Now, the mean annual outlay for Nile protection in the whole of Egypt for the years 1884—1886 was L.E. 54,632. This year it is probably about L.E. 60,000, next year it will probably not exceed 40,000. There are dangers to the Nile banks when there is no excessive flood, and I have no hesitation in saying our expenditure would be unaffected if this reservoir were formed. I admit it would be a help in years like the present one.

Second. — The supply annually of about 2,500 millions cubic metres of water during low Nile". My calculation came to a supply of twenty millions cubic metres daily for hundred days, or two thousand millions in all, not very different from his figures. How would this splendid volume be utilized? From ten to fifteen per cent would be lost in percolation and evaporation. Perhaps five millions would be allowed to flow down the branches of the river to the sea, keeping out the salt water, and supplying the irrigation along the banks. The irrigation of the Province of Behera would henceforth be carried out without the assistance of the Khatatbeh and Afteh pumps. This would create a saving of about L.E. 25,000 a year till the expiration of the lease of the Behera Irrigation

Society in 1915. The Province of the Fayoum would be irrigated at low Nile without the help of the Bahr Yussuf, and about one million cubic metres per diem would be available to extend the *sefi* irrigation in Assiout and Minieh.

The new Nubarieh canal and Mr Grant's reclaimed Aboukir Lake would be able to grow cotton. Low Nile irrigation might be pushed forward to the Lake of Menzaleh in Sharkieh and into the Berari of Gharbieh.

Altogether perhaps 400,000 to 500,000 feddans might be added to the present summer cultivation, and half of that might be under cotton. This would be an extra source of wealth to Egypt, but how would it affect the direct land revenue? Not more than half of it would be applied to desert reclamation and only this half would yield revenue. The other half would go to the improvement of lands already taxed and no additional burden would be laid on them.

The incidence of land revenue in Egypt is so very unequal that it is hard to say what tax might be placed on lands watered throughout the year in addition to what they pay for autumn and winter culture. Perhaps we may put down P. E. 150 per feddan as the mean tax on average lands in Lower Egypt enjoying water at all seasons. P.E. 120 is about the mean tax in Upper Egypt on lands watered only during high Nile. That is there is a difference of P.E. 30 between the tax on land watered all round the year, and on land only watered during high Nile. But the difference is often less, for instance the lands watered all the year round by the Ibrahimieh canal pay only P. E. 5 more than adjoining lands watered only in high Nile.

Mr Whitehouse's reservoir might enable us at the very outside to give perennial irrigation to 300,000 feddans of what is now desert including the lands on the Nubarieh canal. Without his reservoir we could water this area during high Nile, and the diffference of taxation would not exceed 30 P.E. × 300,000 feddans = L.E. 90,000. Add L.E. 25,000 for the sum to be annually saved

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